

### **Amendments to the Drawings**

The attached new sheet of drawings includes a new drawing designated as FIG. 7. This sheet is in addition to the original six (6) sheets including FIGS. 1, 2A, 2B, 3A, 3B, 4, 5A, 5 and 6.

Attachment: New Sheet (including new FIG. 7)

## **REMARKS**

### **Claims in the Case**

Claim 5 is being cancelled. Claims 1, 4, 7, 13 and 19 are being amended. Claims 1-4 and 6-27 are currently pending in the case.

### **Objection to Drawings and Amendment to the Specification and Drawings**

The Office Action objected to the drawings as not showing a multiple interconnect hub embodiment. Applicant has amended the Specification and added a new FIG. 7 to address this concern. As stated in the original Specification at page 9, lines 24-30, "Multiple interconnect hubs 14 may be tied together to provide additional flexibility or survivability if desired." And as shown in FIG. 2A, additional hubs can be connected to the first interconnect hub 14. New FIG. 7 provides two interconnect hubs such as those in FIG. 2A connected together. Applicant respectfully requests that the objection to the drawings be removed.

### **Rejected Claims**

The Office Action rejected the pending claims over U.S. 6,226,296 (Lindsey), U.S. 6,611,537 (Edens), U.S. 4,482,980 (Korowitz), U.S. 5,706,278 (Robillard), U.S. 6,834,057 (Rubenko), U.S. 5,206,857 (Farleigh) alone and in combination with other references.

Applicant has amended the claims to clarify the claimed invention. In particular, Applicant has emphasized more clearly four features of the invention, namely:

- (1) a physical, concentrated star network hub,
- (2) ring communications within the hub,
- (3) synchronous time division multiple access (TDMA) communications for the ring communications, and
- (4) multi-level connection structure where signals sources are first connected to a connection devices that allow communications among the signal sources and the connection devices are connected to the ring communication hub through digital communications.

As represented by the references cited in the Office Action, a wide variety of communication systems have existed. However, the particular solution of the present invention has not before been achieved.

The problem addressed by the present invention was how to distribute signals between large numbers of nodes with reduced latency, with reduced interconnections, and with an improved degree of fault tolerance.

The present invention solves this problem in a unique way. Synchronous TDMA communications allows the system to maintain a relatively fixed latency in its signal distribution. A logical ring network structure allows signal data from any node to be made available to all other nodes on the ring. Forming this ring as a physical hub in a star network configuration allows for significantly higher faulty tolerance. And connection devices to provide digital communications and a dual level communication connection between signal sources and the hub allows for increased flexibility and expandability.

Prior telephone systems have used fiber optic synchronous TDMA communications, such as SONET communications, but have typically done so in rings that span large distances. These rings are not concentrated into a physical hub. Prior local area networks (LANs) have used concentrated switches or hubs, however, these communications are packetized, asynchronous communications.

Lindsey discloses communication networks with different configurations but these appear to use point-to-point cross-bar switches when configured in a star network. Lindsey does not appear to disclose a concentrated star network hub that uses synchronous TDMA communications.

Edens discloses home LAN networks and does not appear to disclose all of the features of the claimed invention.

Korowitz discloses optical ring networks and does not appear to disclose all of the features of the claimed invention.

Robillard discloses a network of sensor devices using a synchronization beacon and transceivers for communications. Robillard does not appear to disclose all of the features of the claimed invention.

Rubenko discloses cable modem communication systems and does not appear to disclose all of the features of the claimed invention.

Farleigh discloses an asynchronous, fiber optic ring network and does not appear to disclose all of the features of the claimed invention.

The other cited references also do not appear to disclose all of the features of the claimed invention.

In summary, the unique combination of features provided by the claimed invention are not taught or suggested by the cited references. In particular, the cited references do not teach or suggest the combination of synchronous time division multiple access (TDMA) communications for the ring communications within a concentrated central hub connected in a star configuration to provided digital communications to a ring of mid-level connection devices that are in turn can be connected to a plurality of signal sources, as currently claimed.

In light of the above amendments and arguments, withdrawal of the pending rejections are respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that the pending claims are in condition for allowance. Accordingly, favorable reconsideration and Notice of Allowance are respectfully requested.

The Examiner is invited to contact the undersigned at the phone number indicated below with any questions or comments, or to otherwise facilitate expeditious and compact prosecution of the application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brian W. Peterman", written over a horizontal line.

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